

a.) Amendment to the Specification:

Please amend the paragraph at page 1, lines 10-20 to read as follows.

Still more specifically, the invention relates to a retroreflective sheeting which is provided with a destructive layer, the sheeting comprising at least a surface layer, retroreflective element layer and an adhesive layer, characterized in that at least one destructive layer is provided between the layers constituting the retroreflective sheeting, the resin constituting said destructive layer being alicyclic polyolefin resin or alicyclic acrylic resin; and when the retroreflective sheeting which is once stuck on a substrate is peeled off from the substrate, the peeling takes place at the interface of the destructive layer and the layer which is in intimate contact ~~therewith, or therewith, and/or by~~ destruction of the destructive layer.

Please amend the paragraphs at page 2, lines 7-35 to read as follows.

Retroreflective sheeting which reflects entering light toward its light source is well known heretofore, and the sheeting utilizing its retroreflectivity has been widely used in the fields of application as above-named. In particular, ~~adoption utilization~~ of retroreflective sheeting for making various kinds of authentication stickers is increasing in recent years.

As such retroreflective sheeting, enclosed lens-type retroreflective sheeting and encapsulated lens-type retroreflective sheeting using micro-glass beads on which a specular reflective layer is provided, are well known.

Examples of enclosed lens-type retroreflective sheeting are disclosed in detail in JP Sho59(1984)-71848A (corres. to US Patent Nos. 4,721,694 4,721,649 and 4,725,494) to Belisle, et al., which are to be referred to for specific disclosures explanation of the sheeting. Examples of encapsulated lens-type retroreflective sheeting are disclosed in detail in JP Sho40 (1965)-7870B (= U. S. Patent No. 3,190,178) to McKenzie, JP Sho52(1977)-110592A (= U. S. Patent No. 4,025,159) to McGrath, and JP Sho62(1987)-121043A (=U. S. Patent No. 5,064,272) to Bailey, et al, which are to be referred to for specific disclosures explanation.

Furthermore, various techniques have been proposed for prevention of tampering of such retroreflective sheeting.

International Publication WO 01/02883 to Bacon discloses provision of novel removable retroreflective sheeting whose adhesive layer adjacent to the specular reflective layer (17 in Fig. 1) comprises an organofunctional coupling agent. However, according to the technology as disclosed in said patent, in the occasion of the removal, the specular reflective layer remains on the side of those micro-glass beads to retain retroreflectivity of the sheeting and can be re-used when a new adhesive layer is laminated thereon. This is undesirable from the standpoint of preventing tampering.

Please amend the paragraph at page 3, lines 13-19 to read as follows.

wherein the bond between the reflective layer and the adhesion enhancing layer and the bond between the adhesion enhancing layer and the adhesive are each more tenacious than the bond between the reflective layer and embossed layer and further

wherein the bond between the adhesive and the adhesion enhancing layer is more tenacious than the bond between the adhesive and reflective layer (cf. Claim 1).

Please amend the paragraphs at starting at page 6, line 29 and ending at page 7, line 27 to read as follows.

In particular, a printed layer may be given the breakable property according to the present ~~patent, invention~~, which is installed on upper surface or lower surface of the protective layer either partially or over the whole, depending on necessity of individual occasion. Or a part of a multi-colored printed layer may be used as the destructive layer. The structure of using the printed layer as the destructive layer is preferred for easy visual determination whether the sheeting has been peeled off.

Thickness of the destructive layer can be suitably determined according to the position of its installation. Normally preferred thickness may range, for example, 0.1 – 100 µm. With a ~~reflective retroreflective~~ sheeting in which the destruction takes a form of interfacial separation of the destructive layer from the layer in intimate contact therewith, the destructive layer is not required to be very thick, which ~~preferably ranges~~ may range from 0.1 – 10 µm, in particular, 0.1 – 5 µm. When the peeling off is to be done by destruction of the destructive layer, ~~preferred thickness ranges~~ the thickness may range from 1 – 100 µm, in particular, 5 – 50 µm. Where the thickness is less than 0.1 µm, the destructive layer does not function satisfactorily and peeling becomes incomplete. Whereas, when the thickness exceeds 100 µm, such inconveniences are invited that destruction is apt to take place before adhesion of the sheeting to substrate or that

deformation at the site of the destructive layer tends to occur during transportation or storage.

As a method for providing the destructive layer, coating, printing, lamination or spraying method can be suitably adopted.

The resin useful for forming destructive layer is alicyclic polyolefin resin or alicyclic acrylic resin, which should be adequately selected according to the form of destruction.

~~Cyclopentane resins useful for constituting Where cyclopentane resin is used as the resin to make the destructive layer include cyclopentane resin (following formula 1a), bicyclopentane resin (following formula 1b) and cyclopentanorbornene resin (following formula 1c) as given in the following; and are suitable; and as vinylcyclopentane resins include resins, vinylcyclopentane resin (following formula 2a), vinylcyclopentanorbornene resin (following formula 2b); or cyclohexadiene resin (following formula 3a) or cyclohexane resin (following formula 3b) are preferred.~~

Please amend the paragraph at page 8, last two lines at the bottom to read as follows.

As alicyclic acrylic resins constituting the destructive layer, methacrylic acid ester resin (formula 4 below) is (following formula 4) and the like are preferred. In the above formulae, the substituent  $R^1$  is preferably cyclohexyl, and substituents  $R^2$  and  $R^3$  each is preferably hydrogen (-H), methyl (-CH<sub>3</sub>), cyano (-CN), methoxycarbonyl

(-COOCH<sub>3</sub>), ethoxycarbonyl (-COOC<sub>2</sub>H<sub>5</sub>), cyclohexyloxycarbonyl (-COO(cyclo-C<sub>6</sub>H<sub>11</sub>))  
or n-butoxylcarbonyl (-COO(n-C<sub>4</sub>H<sub>9</sub>)).

Please amend the paragraph at page 9, lines 11-17 to read as follows.

It is particularly preferred that the substituent R<sup>1</sup> in the above cyclopentane resin (above formula 1a) is ~~hydrogen or cyclohexyl group~~. A structure wherein ~~two substituents are both R<sup>1</sup>~~ is hydrogen shows increased crystallinity and its transparency tends to decrease. When the substituent R<sup>1</sup> is ~~hydrogen or cyclohexyl or the like~~, an amorphous polymer is formed which has improved transparency and is particularly preferred for use as for forming the destructive layer of the present invention.

Please amend the paragraph starting at page 9, line 30 and ending at page 10, line 5 to read as follows.

The substituents R<sup>2</sup> and R<sup>3</sup> in these vinylcyclopentane resin (above formula 2a) and vinylcyclopentanobornene resin (above formula 2b) can be selected from hydrogen (-H), methyl (-CH<sub>3</sub>), cyano (-CN), methoxycarbonyl (-COOCH<sub>3</sub>), ethoxycarbonyl (-COOC<sub>2</sub>H<sub>5</sub>), cyclohexyloxycarbonyl (-COO(cyclo-C<sub>6</sub>H<sub>11</sub>)) and n-butoxycarbonyl (-COO(n-C<sub>4</sub>H<sub>9</sub>)). Use of these is particularly preferred to secure favorable optical characteristics such as transparency and refractive index, and heat resistance.

Please amend the paragraphs starting at page 10, line 34 and ending at page 11, line 16 to read as follows.

As examples of aliphatic hydrocarbon wax, polyethylene wax, polypropylene wax, microcrystalline wax, paraffin wax and fischertrops wax can be named. Examples of fatty acid ester wax include sazole wax, montanic acid ester wax, carnauba wax, rice wax, bees wax and candelilla wax. Examples of saturated aliphatic acid wax include stearic acid and montanic acid. Examples of saturated alcohol wax include ~~stearin alcohol~~ stearyl alcohol and behenyl alcohol. As examples of metallic soap, calcium stearate and zinc stearate can be named. These waxes can be added in an amount ranging from 1 – 100 ~~parts by weight~~ wt parts per 100 wt parts of the resin constituting the destructive layer.

Furthermore, preferably light-transmissive, organic or inorganic filler may be added to the above resin(s). Examples of useful inorganic filler include glass powder, silicon dioxide, titanium dioxide, aluminum hydroxide and magnesium hydroxide. Examples of organic filler include acrylic resin powder and the like.

Preferred particle size of such fillers ranges from 0.1 to 5  $\mu\text{m}$ , and their preferred amount of addition ranges 1 – 100 ~~parts by weight~~ wt parts per 100 wt parts of the resin constituting the destructive layer.

Please amend the paragraph starting at page 11, line 31 and ending at page 12, line 14 to read as follows.

The retroreflective sheeting provided with a destructive layer according to the present invention comprises a surface layer and retroreflective element layer, characterized in that at least one destructive layer is provided between those layers constituting the retroreflective sheeting, that the resin constituting the destructive layer is alicyclic polyolefin resin or alicyclic acrylic resin and , where an adhesive layer is further provided in the retroreflective sheeting to adhere the latter to a substrate and when the sheeting is peeled off from the substrate later, that the peeling takes place by interfacial separation of the destructive layer from a layer in intimate contact therewith and/or by destruction of the destructive layer; ~~or the sheeting comprises at least a surface layer, retroreflective element layer and adhesive layer, characterized in that at least one destructive layer is provided between the layers constituting the retroreflective sheeting and when the sheeting is peeled off from the substrate onto which the sheeting was adhered once, the peeling takes place by interfacial separation of the destructive layer from a layer which is in intimate contact therewith and/or by destruction of the destructive layer.~~

Please amend the paragraph at page 12, lines 22-25 to read as follows.

In reflective sheeting in general, the adhesive (tackifier) to adhere the sheeting to substrate is designed to have the least peeling strength, which is, taking an example of aluminum substrate, 5 – 20 N/25 N (newton)/25 mm.

Please amend the paragraph at page 13, lines 22-26 to read as follows.

When alicyclic polyolefin resin or alicyclic acrylic resin is used as the resin constituting the destructive layer provided in the retroreflective sheeting of the present invention, due to their alicyclic structure ~~resin~~ a destructive layer having total light transmission exceeding 75% can be easily obtained.

Please amend the paragraph starting at page 13, line 32 and ending at page 14, line 6 to read as follows.

The retroreflective sheeting provided with a destructive layer according to the present invention comprises at least a surface layer, retroreflective layer and an adhesive layer, in which at least one destructive layer is provided between those layers constituting the retroreflective sheeting, said destructive layer being made of alicyclic polyolefin resin or alicyclic acrylic resin, and, when the retroreflective sheeting once stuck on a substrate is then peeled off from the substrate, the peeling takes place ~~either~~ by interfacial separation of the destructive layer from a layer which is adjacent to the destructive layer ~~or~~ and/or by destruction of the destructive layer.

Please amend the paragraph starting at page 16, line 35 and ending at page 17, line 9 to read as follows.

The retroreflective sheeting ~~according to the present invention of Fig. 7~~ is composed of a surface layer(1), destructive layer (11) provided on top of the surface layer, holding layer (3) to hold many micro-glass beads (4), focus-adjusting layer (5) which is provided for effectively retroreflecting entering light and a specular reflective layer (6) for specularly reflecting light, in which the layers (3 – 6) constitute a retroreflective element layer which is adhered to a back-protective layer (10) which protects the specular reflective layer, via the adhesive layer (7). Also the surface layer (1) is stuck on a transparent substrate (8) by another adhesive layer (9).

Please amend the paragraphs at page 24, lines 15-23 to read as follows.

~~So formed retroreflective sheeting c3 was stuck on a 2 mm thick aluminum plate for performance measurement, which was used as the test piece c3 for the peeling test.~~

The results of the performance test of those test pieces as obtained in above Examples and Comparative Examples were as given in Table 1.

The peeling test of test piece 7 of Example 7 caused blanks of each 5 mm in diameter spaced by 2 cm in the alphabetical letters ABC, allowing ready recognition that the peeling took place.

Please amend the Abstract at page 29 to read as follows.

This invention provides a retroreflective sheeting provided with a destructive layer, which comprises at least a surface layer, retroreflective element layer and adhesive layer, characterized in that at least one destructive layer is provided between the layers constituting the retroreflective sheeting, that the resin constituting said destructive layer is alicyclic polyolefin resin or alicyclic acrylic resin; and when the retroreflective sheeting which is once stuck on a substrate is peeled off from the substrate, that the peeling takes place at the interface of the destructive layer and the layer which is in intimate contact therewith and/or by destruction of the destructive layer.